

# Telecommunications Almanac

This section provides key data about the status of telecommunications in Vermont. These statistics and other data provide important indicators of where Vermont has been doing well in meeting its telecommunications needs, and where there is room for further improvement.

## A. Telecommunications Adoption Statistics

### TELEPHONE PENETRATION

Vermont has in recent times consistently ranked high in the level of residents with telephone access, one of the most basic levels of telecommunications connectivity. Vermont is one of the top four states in the level of telephone pene-

**Table 3.1:**  
**Telephone penetration by state**

Percentage of Households with Telephone Service			
<i>State</i>	<i>Nov-83</i>	<i>Nov-02</i>	<i>Change</i>
Maine	90.7%	98.3%	7.6%
Pennsylvania	95.1%	98.1%	3.0%
Colorado	94.4%	97.8%	3.4%
<b>Vermont</b>	<b>92.7%</b>	<b>97.6%</b>	<b>4.9%</b>
Minnesota	96.4%	97.4%	1.1%
New Jersey	94.1%	97.3%	3.2%
New Hampshire	95.0%	97.2%	2.3%
Iowa	95.4%	97.1%	1.7%
Connecticut	95.5%	97.0%	1.5%
Hawaii	94.6%	96.9%	2.3%
California	91.7%	96.8%	5.1%
Delaware	95.0%	96.8%	1.8%
Missouri	92.1%	96.8%	4.7%
Oregon	91.2%	96.8%	5.6%
Wisconsin	94.8%	96.8%	2.0%
Massachusetts	94.3%	96.7%	2.4%
Utah	90.3%	96.7%	6.4%
Maryland	96.3%	96.6%	0.3%
Alaska	83.8%	96.3%	12.5%
Ohio	92.2%	96.3%	4.1%
New York	90.8%	96.0%	5.2%
Washington	92.5%	95.9%	3.5%
Nebraska	94.0%	95.8%	1.8%
Idaho	89.5%	95.6%	6.1%
Arizona	88.8%	95.5%	6.8%

**Table 3.2:**  
**Telephone penetration by state continued**

Percentage of Households with Telephone Service			
<i>State</i>	<i>Nov-83</i>	<i>Nov-02</i>	<i>Change</i>
Rhode Island	93.3%	95.5%	2.2%
Virginia	93.1%	95.3%	2.2%
<b>Total United States</b>	<b>91.4%</b>	<b>95.3%</b>	<b>3.9%</b>
Nevada	89.4%	95.2%	5.8%
Kansas	94.9%	95.1%	0.2%
District of Columbia	94.7%	95.0%	0.3%
North Dakota	95.1%	94.9%	-0.2%
South Dakota	92.7%	94.9%	2.2%
Florida	85.5%	94.8%	9.3%
Kentucky	86.9%	94.7%	7.8%
West Virginia	88.1%	94.6%	6.5%
Texas	89.0%	94.5%	5.5%
North Carolina	89.3%	94.3%	5.0%
Tennessee	87.6%	94.0%	6.4%
Oklahoma	91.5%	93.5%	2.0%
South Carolina	81.8%	93.5%	11.7%
Wyoming	89.7%	93.5%	3.8%
Indiana	90.3%	93.2%	2.9%
Michigan	93.8%	93.2%	-0.6%
Montana	92.8%	93.2%	0.4%
Illinois	95.0%	93.0%	-2.0%
Louisiana	88.9%	93.0%	4.1%
Arkansas	88.2%	92.5%	4.3%
Georgia	88.9%	92.4%	3.5%
Alabama	87.9%	92.0%	4.1%
Mississippi	82.4%	91.7%	9.3%
New Mexico	85.3%	90.3%	5.0%

Source: FCC, *Trends in Telephone Service*, 2003.

**Table 3.3:**  
**Telephone penetration 1984-2002**

	<b>1984</b>	<b>1997</b>	<b>2000</b>	<b>2002</b>
Vermont--All Households	91.5%	93.9%	95.6%	98.0%
United States--All Households	91.8%	94.0%	94.5%	95.5%
Vermont--Low Income Households*	75.3%	84.6%	92.9%	94.9%
United States--Low Income Households*	80.1%	86.0%	87.5%	89.1%

\*Defined as households with less than \$10,000 in 1984 dollars, or \$17,427 in 2002 dollars.

Source: FCC, *Telephone Penetration by Income by State*, 2003.

tration. Even among low-income Vermonters telephone penetration is very high, exceeding 95%. (Differences in same-year percentages in Tables 3.1 through 3.3 reflect the source data of the two Federal Communications Commission (FCC) reports used in creating the tables; the FCC collects data monthly and the data listed are from different months of the year.)

**Table 3.4:**  
**Vermont computer-owning households**

Year	Percent of households with a computer	
	<i>Vermont</i>	<i>U.S.</i>
1998	48.7	42.1
2000	53.7	51.0
2001	60.4	56.5

Source: U.S. Dept. of Commerce, NTIA "Falling Through the Net" / "A Nation Online" series.

**Table 3.5:**  
**Vermont Internet households**

Year	Percent of households with Internet service	
	<i>Vermont</i>	<i>U.S.</i>
1998	31.8	26.2
2000	46.7	41.5
2001	53.4	50.5

Source: U.S. Dept. of Commerce, NTIA "Falling Through the Net" / "A Nation Online" series.

**Table 3.6:**  
**Broadband Internet households**

Percent of households with broadband service	
<i>Vermont</i>	<i>U.S.</i>
17	22

Sources: BusinessWeek, "The E-Biz Surprise," May 12, 2003, p.68; PSD Nov. 2003 residential telephone survey.

## COMPUTER AND INTERNET ACCESS ADOPTION

In recent years Vermont has consistently ranked slightly ahead of the national average in both computer ownership and in subscriber-ship to Internet service. These statistics are available through periodic special studies conducted by the Census Bureau and the Bureau of Labor Statistics as part of its monthly Current Population Study. Table 3.4 shows figures for computer ownership and Table 3.5 shows the census figures for Internet access. A year 2003 estimate for the level of Internet access obtained from the Public Service Department's (PSD) telephone survey conducted in connection with the plan is found in Section 4, Figure 4.18. Statistics on the level of subscribership to broadband Internet service are somewhat harder to obtain, especially for purposes of comparing Vermont to other states. One commercial estimate from early 2003 of broadband Internet penetration among all U.S. households reports that approximately 22% of homes in the U.S. had high-speed Internet service.<sup>1</sup> Results from the PSD's telephone survey of Vermont households in November 2003 indicated that about 17% of all Vermont households subscribed to broadband Internet service. Table 3.7 shows the number of high-speed lines in Vermont and selected states. After a slow start, the number of reported high-speed lines in Vermont has grown during most six-month periods at a percentage rate that meets or exceeds national average rates for growth. The FCC statistics used to produce this table may in fact under-represent high-speed lines in Vermont, as only service providers with more than 10,000 lines are required to report to the FCC.

**Table 3.7:**  
**High-speed lines, selected states 2000-2003**

	June 2000		Dec. 2000		June 2001		Dec. 2001	
	<i>Lines</i>		<i>Lines</i>	<i>% Change</i>	<i>Lines</i>	<i>% Change</i>	<i>Lines</i>	<i>% Change</i>
Vermont	1,551		7,773	401%	16,230	109%	21,795	34%
Maine	17,864		26,266	47%	38,149	45%	49,523	30%
New Hampshire	33,045		42,364	28%	55,658	31%	71,200	28%
Massachusetts	185,365		289,447	56%	357,256	23%	505,819	42%
New York	342,743		603,487	76%	893,032	48%	1,199,159	34%
Utah	19,612		35,970	83%	55,103	53%	72,977	32%
West Virginia	1,835		6,498	254%	16,697	157%	32,848	97%
New Mexico	2,929		28,497	873%	20,482	-28%	31,940	56%
Washington	118,723		195,628	65%	227,066	16%	335,667	48%
Iowa	49,159		58,199	18%	72,583	25%	82,024	13%
Nationwide	4,367,434		7,069,874	62%	9,616,341	36%	12,792,812	33%
	June 2002		Dec. 2002		June 2003		Dec. 2003	
	<i>Lines</i>	<i>% Change</i>	<i>Lines</i>	<i>% Change</i>	<i>Lines</i>	<i>% Change</i>	<i>Lines</i>	<i>% Change</i>
Vermont	29,990	38%	32,814	9%	39,773	21%	44,724	12%
Maine	61,406	24%	73,061	19%	85,615	17%	99,200	16%
New Hampshire	86,200	21%	102,590	19%	118,879	16%	149,180	25%
Massachusetts	583,627	15%	679,084	16%	821,135	21%	919,638	12%
New York	1,406,894	17%	1,725,296	23%	1,997,340	16%	2,262,804	13%
Utah	93,928	29%	121,744	30%	135,007	11%	162,905	21%
West Virginia	58,209	77%	78,980	36%	90,173	14%	100,937	12%
New Mexico	44,942	41%	57,956	29%	71,969	24%	91,736	27%
Washington	422,348	26%	485,063	15%	577,378	19%	672,247	16%
Iowa	102,932	25%	121,053	18%	162,257	34%	191,464	18%
Nationwide	16,202,540	27%	19,881,549	23%	23,459,671	18%	28,230,149	20%

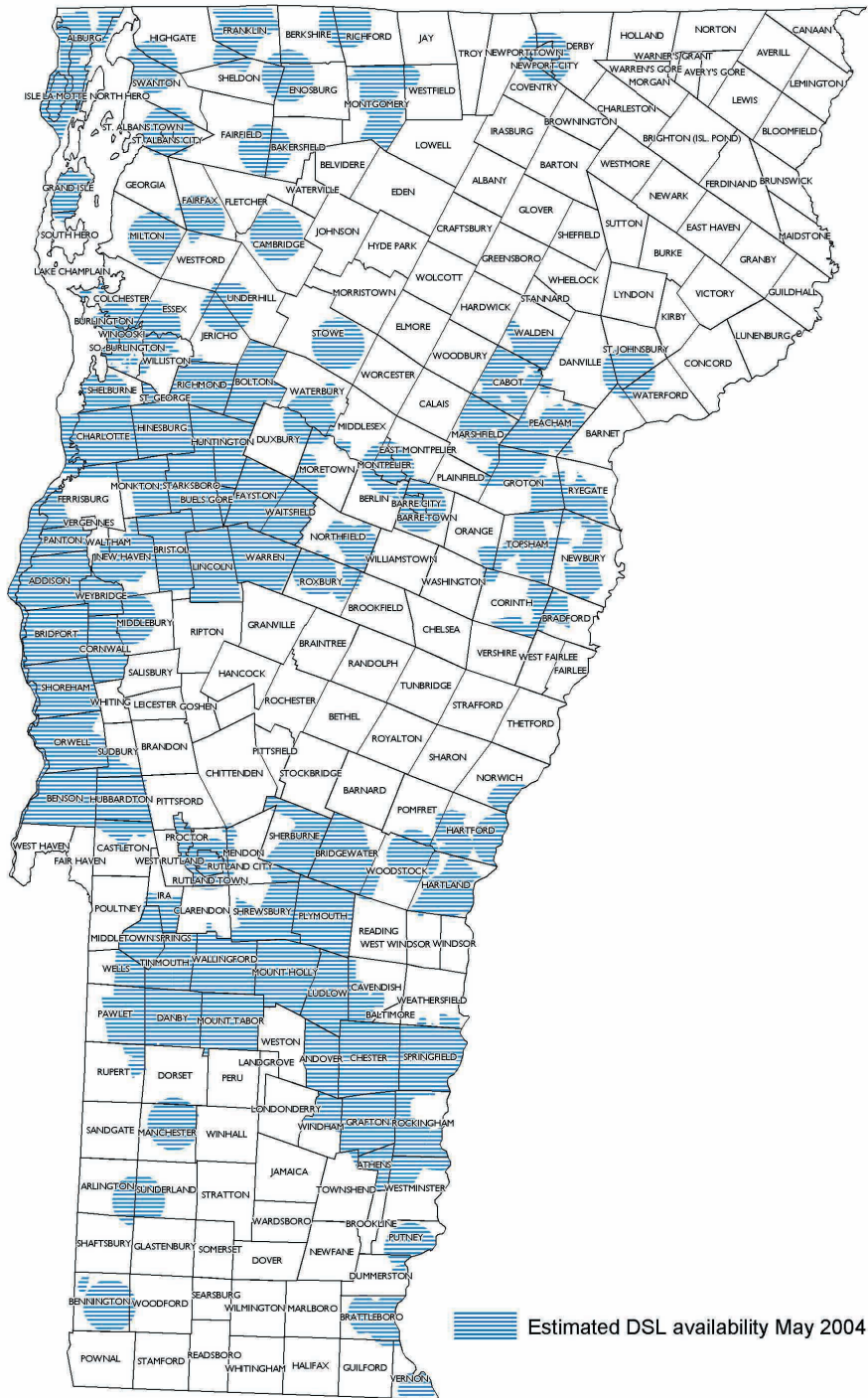
Source: FCC

## B. Service Availability

### BROADBAND SERVICE AVAILABILITY

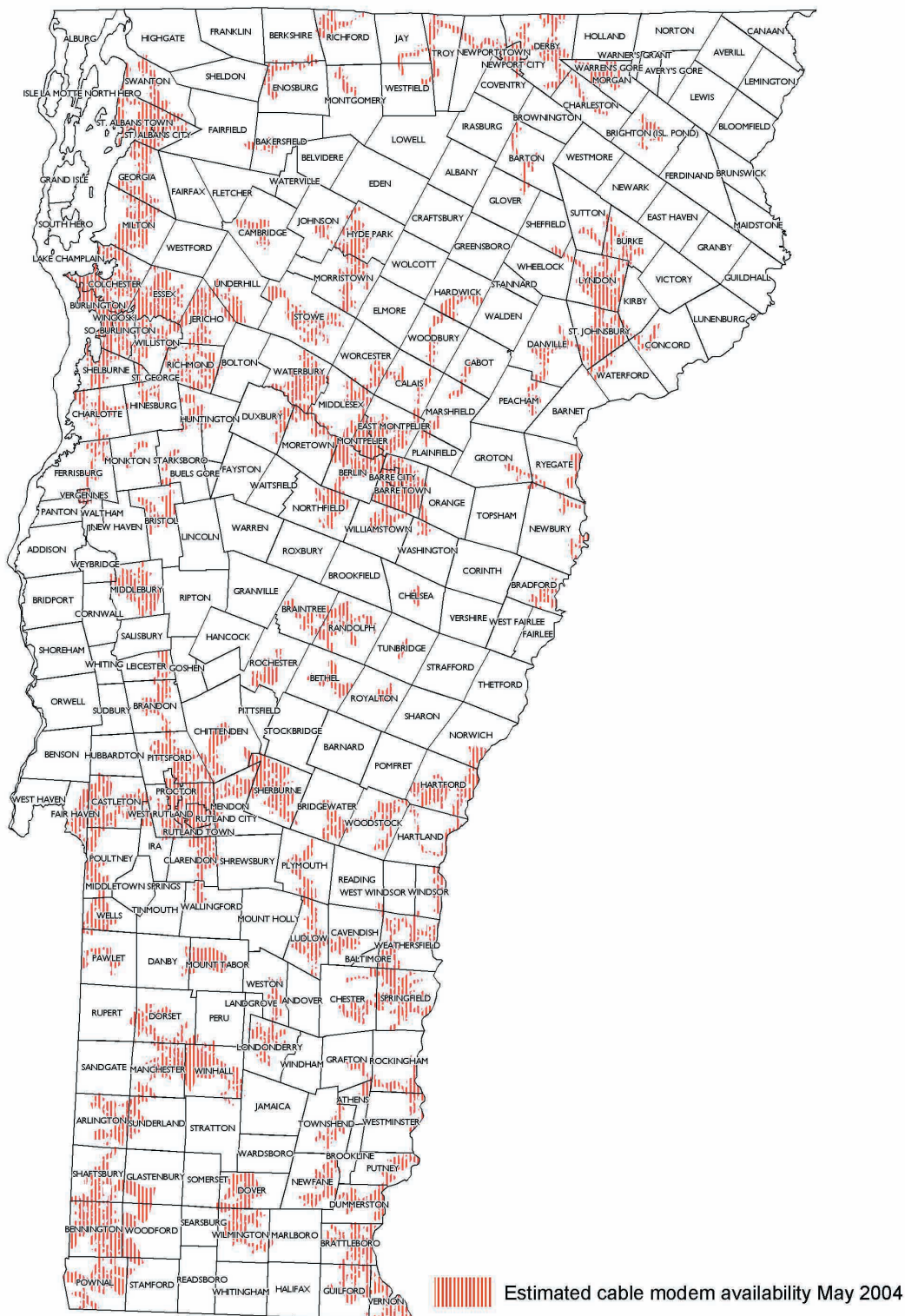
Broadband coverage continues to expand in Vermont. The Public Service Department (PSD) and the Department of Economic Development, with the cooperation of service providers, have engaged in an effort to map this progress and estimate the percentage of Vermonters who have access to services such as cable modem service and Digital Subscriber Line (DSL). Figure 3.1 displays the estimated extent of DSL coverage in Vermont, while Figure 3.2 displays the estimated extent of cable modem coverage. Figure 3.3 shows the combined areas served by DSL and cable modem service in Vermont and the areas where the services overlap. Figure 3.4 shows the estimated coverage by Wireless Internet

**Figure 3.1:**  
**DSL coverage May 2004**

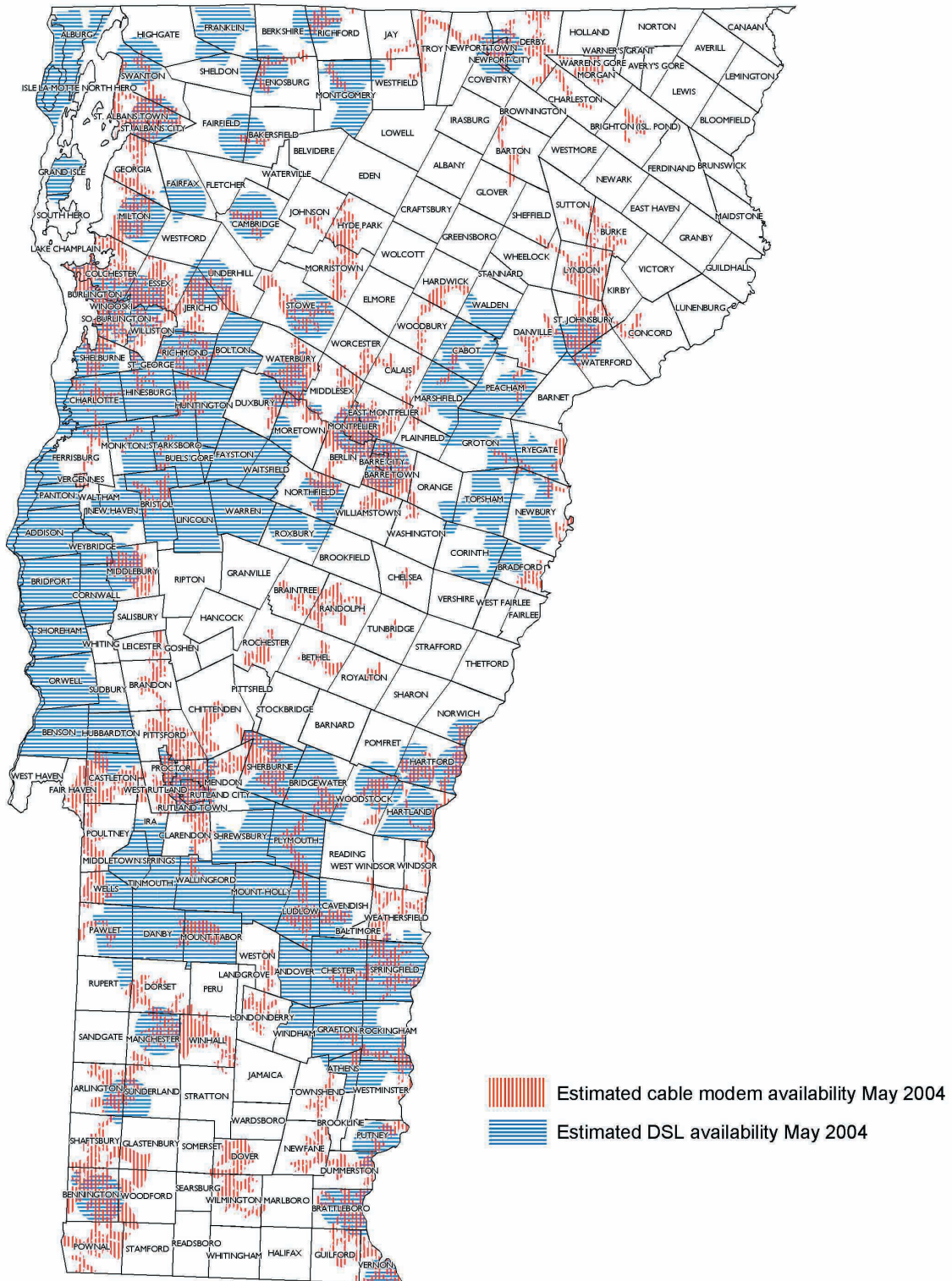




**Figure 3.2:**  
**Cable modem coverage May 2004**

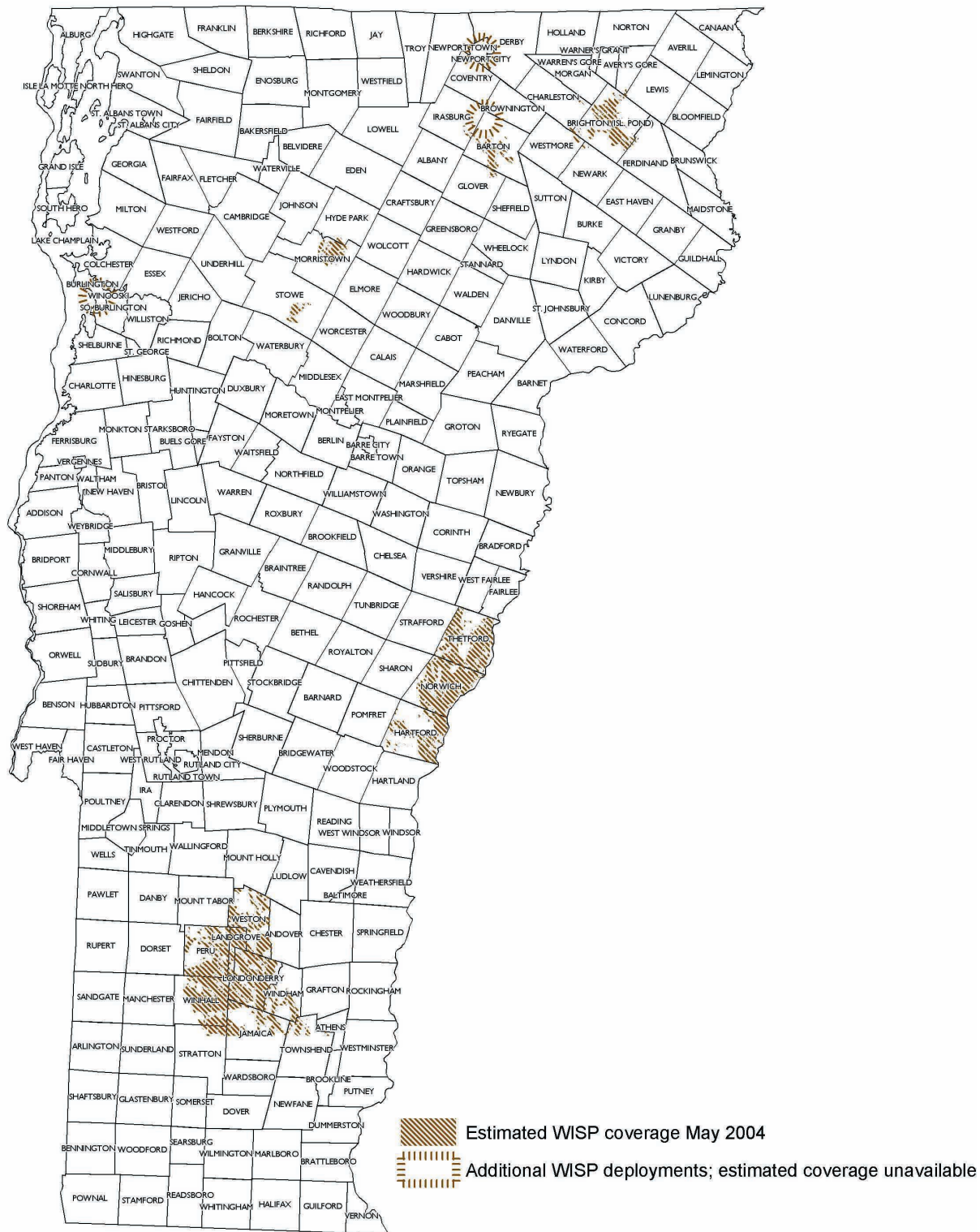


**Figure 3.3:**  
**Combined DSL and cable modem coverage**



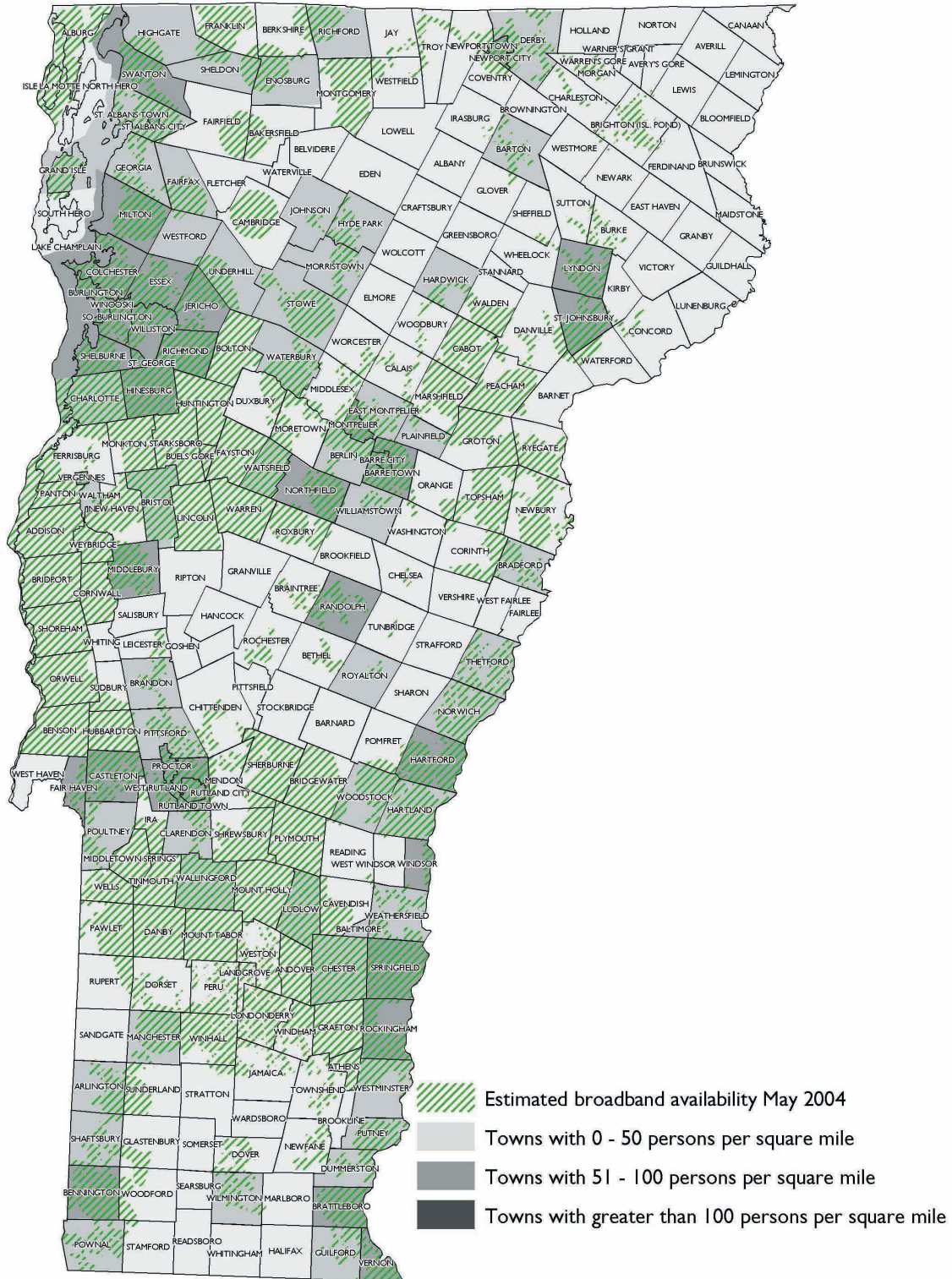


**Figure 3.4:**  
**Wireless ISP broadband coverage**





**Figure 3.5:**  
**Broadband service and population density**



**Table 3.8:**  
**Broadband availability in Vermont by county--2003**

County	Total Population 2000	Total Pop - Cable Modem Coverage	Cable %	Total Pop - DSL Coverage	DSL %	Total Pop: Cable modem or DSL Coverage	Cable modem or DSL Coverage %
Grand Isle	6,901	-	-	1,933	28.01	1,933	28.0
Franklin	45,417	26,632	58.64	24,010	52.87	30,895	68.0
Orleans	26,277	-	-	5,794	22.05	5,794	22.1
Essex	6,459	668	10.3	-	-	668	10.3
Lamoille	23,233	12,338	53.1	3,560	15.3	12,338	53.1
Chittenden	146,571	130,943	89.3	108,930	74.3	139,132	94.9
Washington	58,039	46,470	80.1	41,345	71.2	51,981	89.6
Caledonia	29,702	20,139	67.8	7,042	23.7	20,471	68.9
Addison	35,974	17,078	47.5	26,193	72.8	30,571	85.0
Orange	28,226	10,725	38.0	1,178	4.2	12,016	42.6
Rutland	63,400	49,785	78.5	34,428	54.3	58,676	92.5
Windsor	57,418	23,299	40.6	27,666	48.2	35,604	62.0
Bennington	36,994	31,677	85.6	17,793	48.1	32,014	86.5
Windham	44,216	24,757	56.0	14,179	32.1	26,238	59.3
State of Vermont	608,827	394,511	64.8	314,051	51.6	458,331	75.3

## Estimating Broadband Coverage in Vermont

Using Geographic Information Systems (GIS) software, the Department of Economic Development and its contractor, the Technology Policy Group (TPG) of Ohio State University, were able to develop the estimates in this plan with the assistance of the PSD. TPG first estimated the geographic extent of DSL and cable modem service. It was possible to generate a map of the areas served by cable systems with modem service using maps of served roads submitted by cable companies to the PSD with their annual reports. Estimating DSL

coverage was trickier. Some telephone companies provide DSL service essentially throughout their telephone exchanges, and these exchanges were shaded in their entirety. In other instances, TPG estimated the possible "reach" of DSL services from known service locations provided by telephone companies. This method, while not exact, provides one of the best methods for estimating DSL known to be in use at this time. Still, these estimates should not be assumed to have greater precision than they actually have. To convert the estimated geographic

extent of broadband service into an estimate of the population to which the service is available, TPG used year 2000 U.S. Census information. The population of the census blocks overlain by broadband service areas was used to calculate an estimate of the population in areas served by broadband. Again, this is an imprecise estimate, but the numbers produced are consistent with what might be expected, given what else is known about the penetration of cable TV service and the percentage of the population served by telephone companies offering DSL.

Service Providers (WISPs). (For both DSL and WISP services, coverage for higher-priced broadband services marketed to businesses is slightly greater than shown; these figures show only areas covered by mass-market broadband services.) Figure 3.5 displays the combined coverage with a population density overlay. High-speed access via satellite is not displayed. As the telephone survey detailed in Section 4 reveals, only a small fraction of Vermonters currently obtain broadband access via satellite or wireless. While denser locations in Vermont are more likely to have broadband service available there are also low-density areas that have broadband service, especially DSL and wireless broadband. Table 3.8 shows an estimate of the percentage of the population with access to broadband service, broken down by county. (For an explanation of the method by which these maps and coverage estimates were generated, please see the sidebar, “Estimating Broadband Coverage in Vermont.”) Additional maps depicting 2002 cable modem and DSL availability can be found at [http://www.state.vt.us/psd/Menu\\_options/Telecomm\\_files/telplan4maps.html](http://www.state.vt.us/psd/Menu_options/Telecomm_files/telplan4maps.html).

## CABLE TV AVAILABILITY

Cable service has slowly continued to expand in Vermont. A significant expansion can be expected with an agreement by Adelphia Cable to complete its agreed-to line extensions. Figure 3.6 displays the extent of cable service in Vermont. (See also Figure 2.3 in Section 2, “Telecommunications Initiatives and Activities,” for a map of cable systems by operator.) Results of the PSD telephone survey presented in Section 4, Survey Results and Public Input Process, indicate that about 65% of Vermonters either have cable TV service or have cable facilities running by their homes so that they could subscribe if they wanted to do so.

### C. Comparative Prices

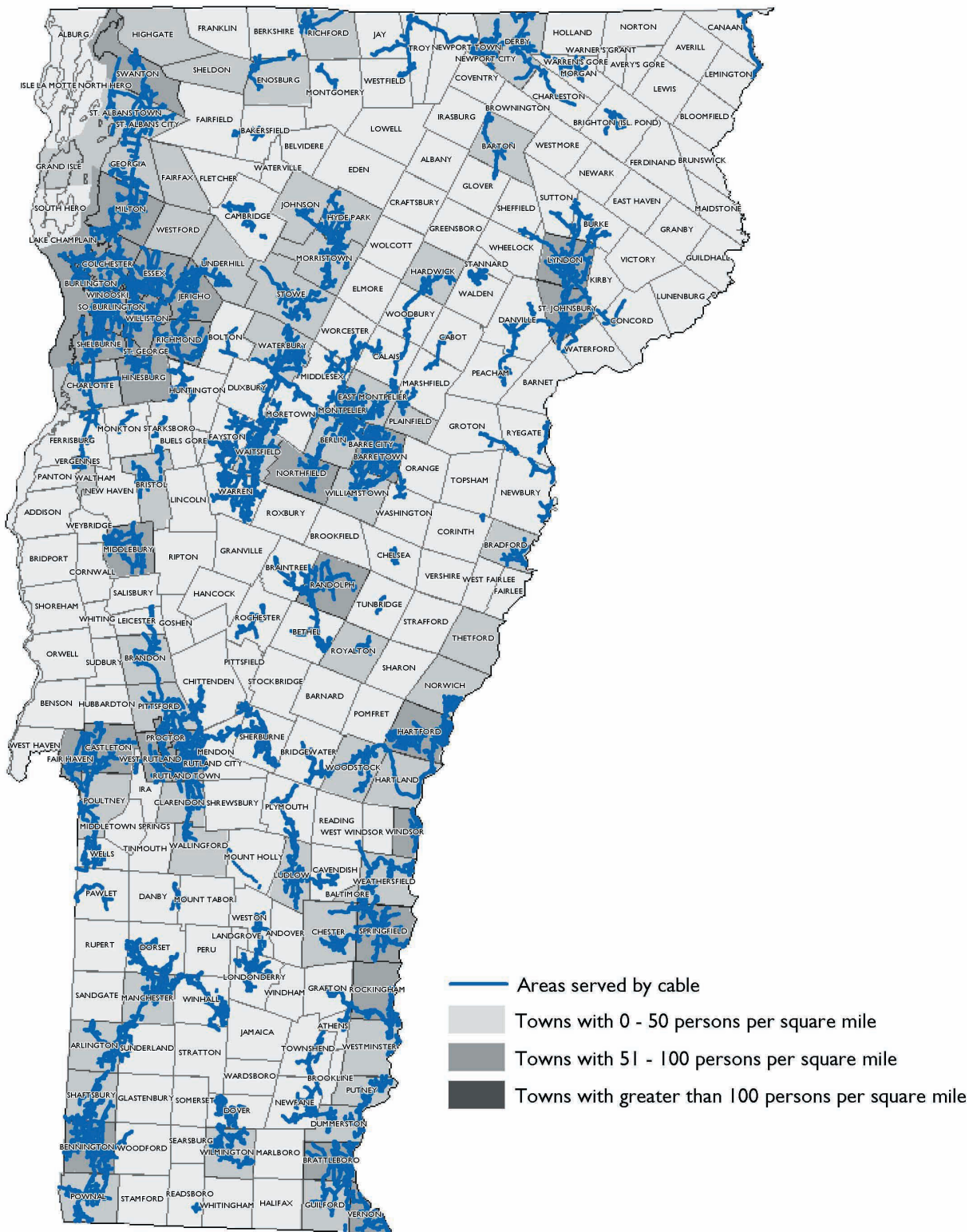
## LOCAL TELEPHONE

### RETAIL RATES

The local telephone rates of Vermont’s ten incumbent telephone companies (Verizon and the nine independents) are important elements in Vermonters’ telephone bills, although dial tone rates do not tell the whole story. Table 3.9 shows the rates, current as of the end of 2003, two key rates regulated by the Public Service Board (PSB): the local dial tone rate and the per-minute charges that companies charge for calls made to the consumer’s home exchange and their extended area service (EAS) local calling area. While most consumers are charged by the minute for local calls, most also have a cap on the total amount they will be charged for local usage in addition to the monthly local charge. Table 3.10 shows how much customers who use various levels of local usage would be charged by various incumbent local companies, minus state sales tax and federal excise tax (which together add an additional 9% to the bill). Statistics filed with the FCC indicate that the average Verizon-Vermont customer made about 1500 minutes of local calls per month in 2002.<sup>2</sup> Although many people believe that local telephone rates are set entirely at the state level, there



**Figure 3.6:**  
**Cable TV coverage 2004**





**Table 3.9:**  
**Incumbent telephone company local rates 2003**

Company	LMS Rate (Cents/Minute of Use)					Dial Tone Local Rate with Touch Tone			Local Usage Caps		
	Home Exchange			EAS							
	Peak	Off-Peak		Peak	Off-Peak		Residential	Business		Residential	Business
Verizon	2.2	0.5		2.2	0.5		\$13.15	\$32.00		\$26.25	\$43.27
VTel	2.2	0.5		2.2	0.5		\$12.70	\$23.25		\$25.00	\$35.00
Fairpoint	1.0	0.5		2.5	0.5		\$13.20	\$23.65		\$24.00	\$38.00
WCVT*	1.0	0.5		2.2	1.0		\$13.40	\$26.40		\$28.00	\$38.00
Shoreham	2.0	0.5		3.5	0.5		\$14.95	\$25.30		\$30.00	\$30.00
Topsham	0.0	0.0		3.5	1.5		\$11.35	\$18.10		N/A	N/A
Franklin	0.0	0.0		3.0	1.0		\$10.00	\$18.00		N\A	N\A
Northfield	TDS Co's have declining rate structure, 300 minutes or less - No Chg; 301-600 minutes - 2.5 cents; 601- 901 minutes - 1.5 cents; 901+ minutes - .05 cents						\$14.90	\$23.65		N\A	N\A
Ludlow							\$12.90	\$21.65		N\A	N\A
Perkinsville							\$12.90	\$21.65		N\A	N\A

Notes: Dial tone rates do not include mileage charges, where applicable. Residential caps are in addition to dial tone rates. Residential rates reflect rate with lowest level of included usage.

\*In the Waitsfield exchange, the business local usage cap is \$62.

are rate components of local telephone service which are regulated by the FCC and which make up a significant portion of the local telephone bill. In addition to the monthly dial tone rate and local usage charges, the federal and state rates included in Table 3.10 are:

- ▶ The federal Subscriber Line Charge (SLC);
- ▶ The Federal Universal Service Charge;
- ▶ The Vermont Universal Service Charge; and
- ▶ Local Number Portability charges.

The SLC, which is like a second dial tone charge, is the largest of these charges, at or near \$6.50 for each company. The Verizon aggregate charges also include a \$1.95 credit to pass through federal high-cost support that Verizon receives from the federal universal service fund. Comparable support that the independent telephone companies receive has been built into their local rates.

A majority of the incumbent telephone companies have reduced their Vermont-regulated local rates since the last plan in 2000. Table 3.11 shows rate changes since the last plan. The biggest single reduction was in the Verizon business dial tone rate, which used to be the highest in New England.

Comparing telephone rates in different states is becoming increasingly difficult. Different states vary in the options for flat-rated service versus measured service and small or large local calling areas. Different states are served by a variety of incumbent local companies with various rates. In addition, competition has

**Table 3.10:**  
**Incumbent telephone company aggregate local charges 2003**

Company	Residential Charges				Business Charges			
	100 local minutes	1000 local minutes	1500 local minutes	2000 local minutes	100 local minutes	1000 local minutes	1500 local minutes	2000 local minutes
Verizon*	\$20.07	\$29.54	\$36.38	\$42.45	\$36.34	\$44.64	\$51.48	\$58.31
VTel*	\$21.38	\$27.41	\$31.51	\$38.35	\$32.07	\$37.54	\$41.64	\$48.47
Fairpoint	\$21.66	\$31.92	\$37.61	\$43.31	\$32.24	\$42.50	\$48.19	\$53.89
Waitsfield and Champlain Valley Telecom	\$21.92	\$32.62	\$38.57	\$44.52	\$35.08	\$45.79	\$51.74	\$57.69
Shoreham Telephone	\$23.94	\$38.75	\$46.98	\$52.68	\$34.42	\$49.23	\$57.46	\$63.16
Topsham Telephone	\$19.92	\$31.31	\$37.64	\$43.97	\$26.75	\$38.14	\$44.47	\$50.80
Franklin Telephone	\$18.30	\$27.41	\$32.47	\$37.54	\$26.40	\$35.51	\$40.57	\$45.64
TDS Northfield	\$22.24	\$34.90	\$37.44	\$39.97	\$31.11	\$43.76	\$46.30	\$48.83
TDS Ludlow	\$20.22	\$32.88	\$35.41	\$37.94	\$29.08	\$41.74	\$44.27	\$46.80
TDS Perkinsville	\$20.22	\$32.88	\$35.41	\$37.94	\$29.08	\$41.74	\$44.27	\$46.80

Rates include all fees and charges except state sales tax and federal excise tax. Cost calculated with half peak local usage minutes and half off-peak minutes. For companies with different home and EAS rates, calculated with half of the peak and off-peak minutes at EAS rates.

\* VTel charges assume customer subscribes to PlainTalk package when cost-effective. Verizon charges assume customer subscribes to standard use local calling package when cost-effective. Tables 3.12 and 3.13 do not make this assumption, and this accounts for the difference between Verizon charges listed in this table under the 1000 minute columns and the Verizon charges listed in those other two tables.

**Table 3.11:**  
**Changes to ILEC dial tone and local usage rates 2000-2003**

Company	Residential Dial Tone Local Rate with Touch Tone		Business Dial Tone Local Rate with Touch Tone		LMS Rate (Cents/Minute of Use)			
	Tone				Home Exchange Peak Usage Rate		EAS Peak Usage Rate	
	2000	2003	2000	2003	2000	2003	2000	2003
Northland/ Fairpoint	\$20.40	\$13.20	\$30.85	\$23.65	2.0	1.0	3.5	2.5
Northfield	\$16.55	\$14.90	\$27.00	\$23.65	No change in rates but minutes included in base rate increased from 180 to 300.			
WCVT	\$13.90	\$13.40	\$28.70	\$26.40			3.0	2.2
Shoreham	\$15.95	\$14.95	\$29.71	\$28.71			5.0	3.5
Topsham	\$13.35	\$11.35	\$20.10	\$18.10				
Franklin	\$11.00	\$10.00	\$19.00	\$18.00				
Bell Atlantic/ Verizon	\$13.65	\$13.15	\$41.06	\$32.00				

Notes: Dial tone rates do not include mileage charges, where applicable. Verizon 2000 dial tone rates are for rate group 7. Residential rates reflect rate with lowest level of included usage.

**Table 3.12:**  
**Average RBOC residential rates by state**

State	Res. Rate		State	Res. Rate
Nevada	\$16.68		Tennessee	\$23.60
New Jersey	\$16.72		Louisiana	\$23.80
Iowa*	\$17.07		Oregon	\$24.31
California	\$17.40		Idaho	\$24.58
Delaware*	\$18.07		Colorado	\$24.81
Oklahoma	\$19.53		North Dakota	\$24.81
Kansas	\$19.71		Hawaii	\$25.12
Connecticut	\$20.16		South Dakota	\$25.37
Indiana	\$20.47		Arkansas	\$25.55
Washington	\$20.56		Montana	\$25.95
Texas	\$20.70		Massachusetts	\$26.17
D. C.	\$20.85		Maine	\$26.55
Ohio	\$20.85		Nebraska	\$26.62
Florida	\$20.86		Alabama	\$26.63
North Carolina	\$21.02		Rhode Island	\$27.17
Alaska	\$21.06		Maryland	\$27.36
Utah	\$21.21		Michigan	\$27.67
Missouri	\$21.27		Mississippi	\$28.78
New Hampshire*	\$21.53		Kentucky	\$28.84
New Mexico	\$21.65		Georgia	\$28.99
South Carolina*	\$21.65		West Virginia	\$29.13
Pennsylvania	\$21.78		New York	\$30.06
Illinois	\$21.92		Wyoming	\$30.22
Arizona	\$22.80		Virginia	\$31.30
Minnesota	\$22.82		<b>Vermont</b>	<b>\$32.10</b>
			Wisconsin	\$35.27
Median:	\$23.60			

\* Multiple density zones reported. Figure is for middle density zone.

Source: Gregg, Billy Jack, "A Survey of Unbundled Network Element Prices in the United States (Updated July 1, 2003)", West Virginia Public Service Commission, except unpublished corrected Vermont rate obtained from Mr. Gregg via e-mail to Christopher Campbell August 14, 2003.

Rates include subscriber line charge, state and federal USF charges and credits, and are based on flat-rated plans where available or otherwise on measured plan rate plus 100 five-minute business day calls and 100 five-minute off-peak calls.



**Table 3.13 :**  
**Average RBOC business rates by state**

State	Bus. Rate		State	Bus. Rate
Illinois	\$13.41		Texas	\$43.54
California	\$16.41		Connecticut	\$44.01
Iowa*	\$17.85		Montana	\$44.35
Pennsylvania	\$19.83		Florida	\$44.61
D. C.	\$21.09		Arkansas	\$44.83
New Jersey	\$22.78		Arizona	\$44.87
Massachusetts	\$22.79		South Dakota	\$45.52
Wisconsin	\$23.28		Kentucky	\$45.59
Maryland	\$23.93		Oklahoma	\$45.62
Michigan	\$24.38		New Mexico	\$45.94
Nevada	\$27.73		South Carolina*	\$46.50
Rhode Island	\$29.22		Louisiana	\$46.52
New York	\$30.20		New Hampshire*	\$46.93
Wyoming	\$30.22		Colorado	\$48.04
Ohio	\$31.30		<b>Vermont</b>	<b>\$48.39</b>
Kansas	\$32.01		Maine	\$48.62
Utah	\$32.37		Alabama	\$49.56
Delaware*	\$33.14		Missouri	\$50.41
Alaska	\$35.37		Mississippi	\$50.82
North Dakota	\$35.66		Indiana	\$53.34
Nebraska	\$38.03		Hawaii	\$53.68
Idaho	\$39.59		Minnesota	\$54.27
Oregon	\$40.52		Tennessee	\$59.22
Washington	\$40.84		West Virginia	\$60.44
North Carolina	\$43.00		Georgia	\$63.64
			Virginia	\$78.75
Median Rate	\$43.54			

\* Multiple density zones reported. Figure is for middle density zone.

Source: Gregg, Billy Jack, "A Survey of Unbundled Network Element Prices in the United States (Updated July 1, 2003)", West Virginia Public Service Commission, except unpublished corrected Vermont rate obtained from Mr. Gregg via e-mail to Christopher Campbell August 14, 2003.

Rates include subscriber line charge, state and federal USF charges and credits, and are based on flat-rated plans where available or otherwise on measured plan rate plus 100 five-minute business day calls and 100 five-minute off-peak calls.

penetrated residential and business markets to various degrees around the country. Competitors' plans increasingly bundle local service as part of a package with other services, and companies like Verizon have responded in kind. All but the smallest businesses have additional options for local service through Centrex, PBXs, or integrated voice-and-data T-1 lines. Furthermore wireless and voice-over-IP offerings

substitute for local offerings to a certain degree. Nevertheless, Tables 3.12 and 3.13 display one type of state-to-state comparison, average rates for areas served by the Regional Bell Operating Companies (RBOCs)—Verizon, BellSouth, SBC, and Qwest. Telephone rates in Vermont are relatively high compared to other states, which is not surprising since the costs to serve Vermont are relatively high. This comparison also does not fully reflect the following two factors that will change the actual rates paid by individual consumers.

- ▶ Users who make fewer calls will pay less while users who use more will pay more. More than 40% of the residential rate and one quarter of the business rate for Vermont listed in the tables are from the charges on a hypothetical 1,000 minutes of usage, split 50/50 between peak and off-peak hours. Most of the states' rates listed are for flat-rated plans. (Unlimited local calling plans were recently re-introduced in Vermont, but at rates exceeding those listed in the tables.)
- ▶ Low-income consumers on Lifeline rates receive a significant discount. Vermont has a relatively high Lifeline credit.

It is also important to note that the local telephone rates noted in Tables 3.12 and 3.13 combine the state-and federally-set rates. In recent years federal subscriber line charges and universal service charges have increased, and these charges also vary by state with Vermont being relatively high.

Finally, a number of competitors now offer local telephone service to residents and businesses. While the majority of local service competitors primarily focus on multiline businesses and data, Table 3.14 shows the rates for two competitors' local service offerings to residents and small businesses with single lines. These offerings do not seek to undercut incumbent offerings on the price of basic dial tone. Instead, they seek to appeal to consumers with bundles of service combining dial tone with local or long distance calling minutes, custom calling features, or even broadband service.

### WHOLESALE RATES

Competition can be influenced by the rates set for services and elements that RBOCs like Verizon must sell to competitors. Although unbundling is a federal

**Table 3.14:**  
**Selected competitive company rates**

	Residential Rate		Business Rate	
	<i>Measured</i>	<i>Unlimited</i>	<i>Measured</i>	<i>Unlimited</i>
MCI	--	\$54.38	--	\$57.73
SoVerNet	\$45.62	\$50.63	\$58.89	\$79.56

Rates include all fees and charges except state sales tax and federal excise tax.

Measured plans cost calculated with 750 peak local usage minutes and 750 off-peak minutes. MCI residential plan also comes with 200 long distance minutes included.

**Table 3.15:**  
**Unbundled loop rates by state**

**Lowest Rate in Each State**

State	Loop Rate		State	Loop Rate
Illinois	\$2.59		Utah	\$11.41
D. C.	\$4.29		Maine	\$11.44
Minnesota	\$5.83		Tennessee	\$11.74
Colorado	\$5.91		Nevada	\$11.75
Ohio	\$5.93		Arkansas	\$11.86
Washington	\$6.05		Kansas	\$11.86
New York	\$7.70		New Hampshire	\$11.97
<b>Vermont</b>	<b>\$7.72</b>		Mississippi	\$12.03
Indiana	\$8.03		North Carolina	\$12.11
New Jersey	\$8.12		Nebraska	\$12.14
California	\$8.24		Oklahoma	\$12.14
Michigan	\$8.47		Texas	\$12.14
Connecticut	\$8.95		Alabama	\$12.58
Arizona	\$9.05		Iowa	\$12.69
Maryland	\$9.51		Missouri	\$12.71
Wisconsin	\$9.51		Louisiana	\$12.90
Delaware	\$10.07		North Dakota	\$13.53
Georgia	\$10.24		Oregon	\$13.95
Pennsylvania	\$10.25		West Virginia	\$14.49
Hawaii	\$10.44		Alaska	\$14.92
Kentucky	\$10.56		South Carolina	\$14.94
Florida	\$10.69		South Dakota	\$15.20
Virginia	\$10.74		Idaho	\$15.65
Massachusetts	\$10.81		New Mexico	\$16.04
Rhode Island	\$11.19		Wyoming	\$19.91
			Montana	\$23.10
Median Rate	\$11.41			

Source: Gregg, Billy Jack, "A Survey of Unbundled Network Element Prices in the United States (Updated July 1, 2003)", West Virginia Public Service Commission.

**Table 3.16:**  
**Unbundled loop rates by state**

**Highest Rate in Each State**

State	Loop Rate		State	Loop Rate
D. C.	\$4.29		Kansas	\$23.34
Indiana	\$8.99		New Mexico	\$23.70
Ohio	\$9.52		Massachusetts	\$24.32
New Jersey	\$10.92		New Hampshire	\$25.00
Illinois	\$11.40		Oklahoma	\$26.25
Michigan	\$12.54		Iowa	\$26.39
Alaska	\$14.92		South Carolina	\$26.72
Wisconsin	\$15.25		Florida	\$26.97
New York	\$15.51		Montana	\$29.29
Minnesota	\$15.66		Tennessee	\$29.37
Delaware	\$16.67		Virginia	\$29.40
Pennsylvania	\$16.75		Georgia	\$30.44
Washington	\$18.70		Kentucky	\$31.11
Maine	\$18.75		Colorado	\$32.74
Texas	\$18.98		North Carolina	\$33.65
Utah	\$19.11		Alabama	\$34.34
Rhode Island	\$19.13		Arizona	\$36.44
California	\$19.69		Idaho	\$40.50
Connecticut	\$19.69		Wyoming	\$40.98
Missouri	\$19.74		West Virginia	\$43.44
Maryland	\$20.57		Mississippi	\$43.85
<b>Vermont</b>	<b>\$21.63</b>		Louisiana	\$48.43
South Dakota	\$21.77		North Dakota	\$51.65
Hawaii	\$21.91		Oregon	\$56.21
Arkansas	\$23.34		Nebraska	\$62.50
			Nevada	\$66.31
Median Rate	\$23.34			

Source: Gregg, Billy Jack, "A Survey of Unbundled Network Element Prices in the United States (Updated July 1, 2003)", West Virginia Public Service Commission.



**Table 3.17:**  
**Unbundled loop rates by state**

**Average Rate in Each State**

State	Loop Rate		State	Loop Rate
Alabama	\$17.60		Missouri	\$15.19
Alaska			Montana	\$23.72
Arizona	\$12.12		Nebraska	\$14.04
Arkansas	\$13.09		Nevada	\$19.83
California	\$9.82		New Hampshire	\$16.21
Colorado	\$15.85		New Jersey	\$9.52
Connecticut	\$12.49		New Mexico	\$18.52
D. C.			New York	\$11.49
Delaware	\$12.05		North Carolina	\$15.88
Florida	\$15.27		North Dakota	\$16.28
Georgia	\$13.14		Ohio	\$7.01
Hawaii			Oklahoma	\$14.84
Idaho	\$20.21		Oregon	\$15.00
Illinois	\$9.81		Pennsylvania	\$13.81
Indiana	\$8.20		Rhode Island	\$13.93
Iowa	\$15.94		South Carolina	\$17.60
Kansas	\$14.04		South Dakota	\$18.84
Kentucky	\$18.04		Tennessee	\$14.92
Louisiana	\$17.30		Texas	\$14.15
Maine	\$16.19		Utah	\$13.03
Maryland	\$11.26		Vermont	\$14.41
Massachusetts	\$13.93		Virginia	\$13.60
Michigan	\$10.15		Washington	\$14.20
Minnesota	\$12.86		West Virginia	\$20.41
Mississippi	\$23.12		Wisconsin	\$10.18
			Wyoming	\$23.39

Source: Gregg, Billy Jack, "A Survey of Unbundled Network Element Prices in the United States (Updated July 1, 2003)", West Virginia Public Service Commission.

obligation under the Telecommunications Act of 1996, individual states set wholesale rates according to costing methodologies established by the FCC. Different states have different costs and different state public utility commissions have performed wholesale rate investigations at various points in time after 1997. A key benchmark price is the cost of a loop—the link between a customer and a central office. Loop rates are geographically deaveraged in each state—states are required by the FCC to have lower wholesale loop rates in lower-cost zones and higher rates in higher-cost zones. Table 3.15 lists the loop price in the lowest-priced zone by state. For its lowest-cost zone, Vermont has one of the lowest wholesale loop rates among the states. (This zone essentially only includes Burlington, South Burlington, Winooski, parts of Colchester, and small parts of Shelburne, Essex, and Williston.) Tables 3.16 and 3.17 list by state the rate for the highest priced zone and the average of loop rates across all zones. For the high-priced zone and the average, Vermont ranks near the middle of the pack.<sup>3</sup>

## HIGH-SPEED DATA

Broadband rates began in 2003 to undergo an evolution. Originally service providers introduced these services to the mass market at price points in the \$40-\$50 range and above. Subsequently, DSL providers, which in many areas have trailed cable modem providers in subscribers, have attempted to regain the initiative with price cuts. In some instances cable modem providers have responded

**Table 3.18:**  
**Selected consumer broadband rates**

Provider	Service	Region	Rate	Note
Adelphia Cable	Cable modem	Vermont, various U.S.	\$42.95	\$54.95 without cable TV
Verizon	DSL	Vermont, various U.S.	\$34.95	
VTel	DSL	Southern Vermont	\$34.95	
SoVerNet	DSL	Vermont	\$35.94	\$37.44 without phone service
Charter Communications	Cable modem	Northeast Vermont, various U.S.	\$39.99	
Cablevision	Cable modem	various U.S.	\$44.95	\$49.95 without cable TV
Cox Cable	Cable modem	various U.S.	\$35.00	\$49.95-69.95 without cable TV. Prices vary regionally, up to \$52 with cable in some areas.
Earthlink	Cable Modem	various U.S.	\$41.95	\$45.95 in Boston and Seattle
Earthlink	DSL	various U.S.	\$49.95	
Comcast	Cable modem	various U.S.	\$42.95	\$57.95 without cable TV
Qwest	DSL	various western U.S.	\$39.99	\$44.99 without a phone package
Yahoo/SBC	DSL	various U.S.	\$59.99	

Prices were web-published rates in effect the week of June 28, 2004, and do not reflect limited-time promotional and term commitment offers. Prices are for services with a minimum nominal speed of 200 kbps in both directions. Other service levels/speeds may be offered at other prices.

in kind. Table 3.18 displays a range of selected broadband prices from Vermont and around the country. At this stage broadband prices from national providers are set less on a state-to-state basis—as telephone rates are—but instead tend to be set on a national or regional basis. Therefore, rates in Vermont tend to be comparable to other locations around the country. In February 2004, the Pew Internet and American Life Project asked broadband users nationwide about the price they pay for service in a survey. DSL users reported an average monthly bill of about \$38, while the average reported cable modem bill was about \$41.<sup>4</sup> Table 3.18 displays a necessarily simplified picture. Many service providers have also tried to appeal to a wider range of customers by offering various tiers of service. Higher prices are linked to features like faster upload or download speeds or static IP addresses. Conversely, some providers have marketed “broadband lite” services that offer speeds just a few times greater than dial-up. As a result, there have been a wide range of broadband services available around the country (and to a fair extent, in Vermont) in the \$25-\$100 price range. The prices displayed in Table 3.18 are for services with nominal download speeds in excess of 786 kbps and nominal upload speeds in excess of 200 kbps (although these speeds may not always be guaranteed). Companies have also been offering a variety of discounts for term commitments and service bundles with phone and television service.

## ACCESS CHARGES

Access charges are payments made by long distance companies to local telephone companies for access to the local network and its callers. Long distance companies pay on both the originating end and terminating end of the call. Although access charges tend to be expressed in terms of per-minute rates they are, in fact, a variety of usage and non-usage sensitive charges. Intrastate access charges are regulated by the PSB and interstate access charges by the FCC. Verizon has reduced intrastate access charges significantly as part of the year 2000 alternative regulation plan, from about \$.10/min. end-to-end to about \$.03/min. This has allowed for significant reductions in long distance rates for calls in Vermont. Table 3.20 shows access charge rates for Vermont’s incumbent

**Table 3.19:**  
**Interstate access charges**

	Verizon	NECA	National Average
Originating per minute	\$0.0044	\$0.0165	\$0.0050
Terminating per minute	\$0.0042	\$0.0165	\$0.0049

Source: FCC, "Universal Service Monitoring Report." 2003. Data for period 7/1/02 through 6/30/03. Does not include non-traffic sensitive rate elements.

telephone companies, and Figure 3.7 compares a composite of usage-sensitive access charge rates for the various companies. Access charge rates remain significantly higher among independent telephone companies. The FCC has over the years reduced interstate access charges to relatively low levels. Table 3.19 shows the rate for Verizon, the National Exchange Carrier Association (NECA) and the national average. (Most independent telephone companies use the NECA rates.) Verizon’s usage-sensitive interstate access charge rates are below half a cent per minute.

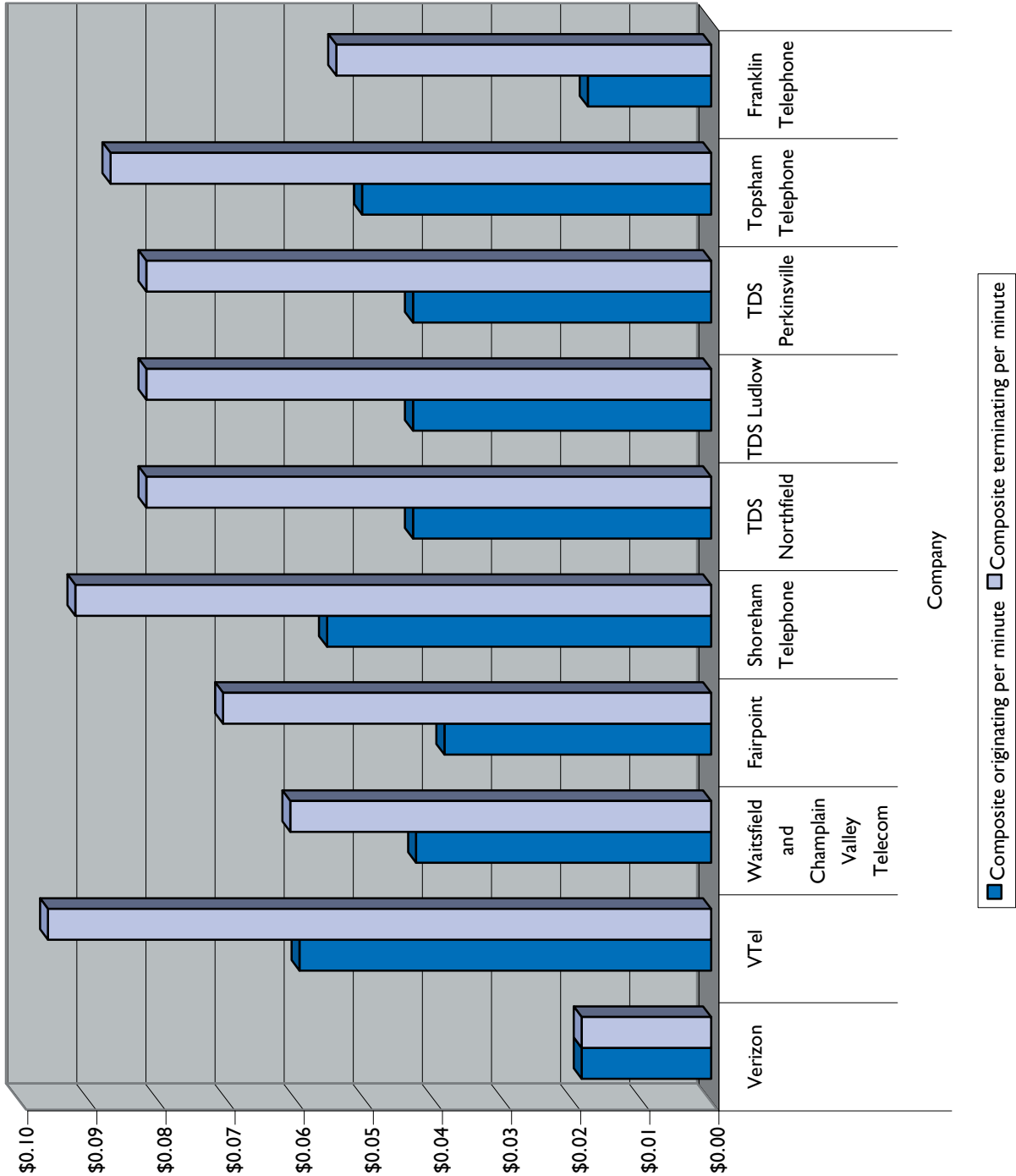
**Table 3.20:**  
**Incumbent telephone company intrastate access charges**

Rate Element	Company									
	Verizon	VTel	Waitsfield and Champlain Valley Telecom	Fairpoint	Shoreham Telephone	TDS Northfield	TDS Ludlow	TDS Perkinsville	Topsham Telephone	Franklin Telephone
CCL Originating per minute	\$0.000000	\$0.0006900	\$0.003450	\$0.004418	\$0.006900	\$0.004740	\$0.004740	\$0.004740	\$0.006900	\$0.006900
CCL Terminating per minute	\$0.000000	\$0.043300	\$0.021650	\$0.036435	\$0.043300	\$0.043300	\$0.043300	\$0.043300	\$0.043300	\$0.043300
Local transport - Circuit Connection - per minute	\$0.000731	\$0.007500	\$0.004892	\$0.007500	\$0.008400	\$0.008400	\$0.008400	\$0.008400	\$0.008400	\$0.008400
Local transport - per mile per minute	\$0.000127	\$0.000680	\$0.000344	\$0.000680	\$0.000423	\$0.000423	\$0.000423	\$0.000423	\$0.002411	\$0.000423
Local switching per minute	\$0.010262	\$0.045140	\$0.034341	\$0.026678	\$0.035200	\$0.030000	\$0.030000	\$0.030000	\$0.035200	\$0.000290
Composite originating per minute	\$0.018740	\$0.059540	\$0.042683	\$0.038596	\$0.055576	\$0.043140	\$0.043140	\$0.043140	\$0.050500	\$0.017840
Composite terminating per minute	\$0.018740	\$0.095940	\$0.060883	\$0.070613	\$0.091976	\$0.081700	\$0.081700	\$0.081700	\$0.086900	\$0.054240
Total originating and terminating per minute	\$0.037480	\$0.155480	\$0.103566	\$0.109209	\$0.147552	\$0.124840	\$0.124840	\$0.124840	\$0.137400	\$0.072081

Assumes 10 miles of local transport, except 61 miles for Verizon, 5.32 miles of local transport for Franklin and 12 miles for Shoreham. Does not include non-usage sensitive elements or tandem switching. Also assumes measured Verizon host-remote local termination only.



Figure 3.7:  
Incumbent telephone company intrastate access charges



**D. Telecommunications and Cable Company Statistics****TELEPHONE ACCESS LINES**

Table 3.21 displays the number of telephone access lines among incumbent companies. Verizon has the largest share of lines by far, as it has historically. It also has the greatest diversity of residential, business, payphone, and special access lines.

The number of Competitive Local Exchange Carrier (CLEC) lines in Vermont is relatively small. The FCC, which collects data on the number of access lines by competitive and incumbent local exchange carriers every six months, does not report competitor statistics for Vermont because of the very small number of competitors reporting. (Companies with fewer than 10,000 lines in a state are not required to report.)

**TELEPHONE CONSUMER COMPLAINTS**

The PSD's Consumer Affairs and Public Information Division receives and resolves consumer complaints about companies and services under the jurisdiction of the PSB. Complaints about various forms of telephone service represent the largest number of complaints the PSD receives. Table 3.22 shows complaint numbers for telephone companies over the years 2000-2003. Complaints about long distance services made up more than half of the complaints about telephone

**Table 3.21:**  
**2003 incumbent telephone company access lines**

	<b>Business</b>	<b>Public (Includes Semi-Public Pay Telephones)</b>	<b>Residential</b>	<b>Special Access Lines (non- switched)</b>	<b>*Local Private Lines</b>	<b>Total</b>
Franklin Telephone	38	1	841	-	-	880
Ludlow Telephone	1,198	-	4,231	-	-	5,429
Northfield Telephone	629	-	2,494	-	-	3,123
Northland Telephone	357	-	5,868	-	-	6,225
Perkinsville Telephone	108	-	861	-	-	969
Shoreham Telephone	363	-	3,342	8	-	3,713
Topsham Telephone	108	-	1,522	-	-	1,630
Verizon Vermont	106,394	2,210	230,238	132,955	26,487	498,284
Vermont Telephone	4,502	-	16,717	308	-	21,527
Waitsfield/Fayston	3,614	-	17,422	335	-	21,371
<b>Total</b>	<b>117,311</b>	<b>2,211</b>	<b>283,536</b>	<b>133,606</b>	<b>26,487</b>	<b>563,151</b>

Source: annual reports 2003

\*Local Private Lines - defined in the FCC account as a special services circuit with either a serial number or telephone number format.

**Table 3.22:**  
**Telephone consumer complaints 2000-2003**

	2001 total access lines	2003	2002	2001	2000
<i>Incumbent Local Exchange Companies</i>					
Fairpoint-Northland Telephone	6,286	5	3	12	15
Franklin Telephone	863	-			
Ludlow-TDS Telecom	5,749	2			3
Northfield-TDS Telecom	3,874	2	1	2	1
Perkinsville-TDS Telecom	989	-			
Shoreham Telephone	3,824	2			1
Topsham Telephone	1,548	-		1	1
Verizon	449,470	269	247	280	274
Vermont Telephone	21,818	14	8	6	12
Waitsfield/Champlain Valley Tel.	21,604	4	2	7	9
<i>Competitive Local Exchange Companies*</i>					
CTC	na	2	3		1
Excel	na	6			
Lightship	na	2	2	5	3
MCI	na	15			
NUI	na	1			
OneStar	na	8	8	4	
Sovernet	na	2			
Telcove	na	7	1	5	
Z-Tel	na	2	1		
<i>Toll Companies with 5 or more complaints*</i>					
America's Digital Satellite Telephone	na	7	8		
America's Telenetwork	na			5	
AT&T	na	155	108	280	273
Broadwing	na		6		
Business Options	na		18		
Excel	na		4	18	19
IDT	na		6		
MCI	na	95	129	111	145
OneStar	na	7	6		
Optical Telecom	na	5	9		
Qwest	na		10	31	24
Sprint	na	24	16	19	13
Talk.Com	na		3	9	
Universal Broadband Communications	na	7	25		
Vartec	na		3		6
World Comm. Satellite Systems	na	6	46		
Other	na		35	46	59

\*Customer base information is not available for competitive local exchange companies and toll companies

service. In these statistics, "complaint" means consumer contact with the PSD in which the consumer was dissatisfied with the action taken by the company prior to his or her contact with the PSD, and, following investigation, the PSD concluded that there is something the utility reasonably could or should have done to resolve the complaint prior to the consumer having to contact the PSD. These are the complaints categorized by the PSD as "escalations" or "interventions."

## CABLE SUBSCRIBERS

There are almost 140,000 cable connections in Vermont. Table 3.23 breaks down subscribership by company. Most cable subscribers in Vermont are customers of Adelphia Cable, which has networks in most regions of the state. Charter Communications is a distant second in cable subscribers in Vermont, although, like Adelphia, it is one of the largest cable companies nationwide. The remaining Vermont cable systems are very small systems with local ownership.

**Table 3.23:**  
**Cable subscribers**

Company	Year 2001 subscribers	Year 2003 subscribers
Adelphia Cable	112,535	114,649
Charter Communications (formerly Helicon Cable)	12,390	12,624
Waitsfield-Fayston Cable	3,700	3,677
Gateway Cablevision	1,887	
*Duncan Cable TV	1,054	2,412
Trans-Video, Inc	1,419	1,562
Southern Vermont Cable	1,396	1,409
North Country Cablevision	1,028	1,112
Stowe Cablevision	934	939
Smugglers Notch CATV	500	547
Jeffersonville Cable TV	335	303
White Mountain	295	250
North Valley Cable Systems	138	138
Opticable	120	90
Olsen's TV & Radio Repair	40	40
Total Cable Connections	137,771	139,752

\* Duncan bought Gateway 9/03

Source: Annual Reports

**(Endnotes)**

<sup>1</sup> BusinessWeek. “The E-Biz Surprise.” May 12, 2003, p.68.

<sup>2</sup> Comments of Vermont PSB re: FCC 03-249, CC Docket No. 96-45. January 14, 2004, p. 6.

<sup>3</sup> Rankings by state for other Unbundled Network Element rates are available in “A Survey of Unbundled Network Element Prices in the United States (Updated July 1, 2003)” by Billy Jack Gregg, Director of the Consumer Advocated Division of the West Virginia Public Service Commission.

<sup>4</sup> Horrigan, John B. *Pew Internet Project Data Memo*. Pew Internet & American Life Project. 2004, p. 5.

